



MEETING MINUTES

Jersey City Environmental Commission
City Hall – 280 Grove Street, Jersey City NJ 07302
Gerald F. Nicholls, Chair
Sara K. Schultzer, Vice Chair

Meeting: Jersey City Environmental Commission Public Meeting

Date / Location: 13 January 2015 – 6:30 p.m.
Caucus Room, 2nd Floor, City Hall, 280 Grove Street, Jersey City, NJ 07302

Attendees:	Commissioners/City Representatives	Public Participants
	Tanya Marione	George Vallone (NJBA)
	Gerry Nicholls	Debra Italiano (SJC)
	Elizabeth Phillips-Lorenzo	Lyndsey Scofield (SJC)
	Sara Schultzer	Karee Skarsten
	Mario Verdibello	Denise Bailey (Society Hill)
		Christy David Jackson (CSG)
		Arvind Swamy (CSG)
		George Tyler (NJBA)
		John Ferrante (E2PM)
		Margaret Carmeli (Tyler & Carmeli)
		Alison Cucco (resident)
		Elizabeth Reynoso (resident)

Prepared By: Sara Schultzer

Date Prepared: 13 January 2015

ROLL CALL

Four of nine commissioners were present, which constituted quorum. Commissioners Holt, Latham, Luebke, Ristorucci and Solowsky were absent.

PRESENTATION

Presentation by George Vallone with supporting comments from John Ferrante and George Tyler regarding NJ Groundwater Remediation Policies.

- George Vallone Officer of NJ Builders Association & President of the Hoboken Brownstone Company
- A Committee established to evaluate potential changes to how groundwater remediation is conducted, particularly in urban environments where water is not used as a potable source-- coalition includes nine urban developers
- Brownfield Remediation process for Soil and GW
 - Soil – can interpolate exist conditions, historic fill, can cap it

- GW – more convoluted.
 - Deed restriction on CEA
 - Monitoring Wells
- Proposing pilot study to deal with contaminated GW by which adjacent historical data can be applied to make conclusions about historical site investigations for area
- Will create profile and propose a new tool to create sub-regional virtual CEA
- Furthermore, will test site GW to verify it's consistent with area conditions.
- Goals:
 - advance development faster and at a lower cost
 - become part of DEP regulations
 - model for other areas
- Not a pass to ignore GW, any other conditions (i.e., VI) needs to be addressed
- Questions:
 - Step-by-step:
 - Per Lot and Block, whereas CEA must map entire plume.
 - Has to go through all investigation
 - Platform for data? Public?
 - Source removal will have region improve over time
 - So then who's responsible for cleanup, every property for itself?
 - What if they contest conditions as better than area's?
 - Does your paper outline exact stipulations for when you can apply data (i.e., upstream, date of) and if outliers and special interest (gas stations/laundry, schools/parks)
 - Who funds the study: developer who initiates it for the area.?
 - How is it documented? Data available to public. GIS format.
- 1 month to study and finalize the white paper, looking to be implemented in 6-12 months.
- Requesting letter to Commissioner Peterson, to vote February 17th.



- Questions can be answered via email before then.
- PDFs of the packet (memo, white paper) are attached.

APPROVAL OF PREVIOUS MEETING MINUTES

Minutes from previous meeting are posted on the website.

The 16 December 2014 Meeting Minutes were accepted and will be posted to the website.

SHADE TREE INVENTORY UPDATE

- Next meeting will be a working meeting and will be held in Council Chambers on 2/17/2015
- Q: timeframe to apply and plant trees? A: GIC deliverable in May 2015. Then JCEC can provide data and recommendations to the City Council.
- Q: Will this affect independent tree initiatives? A: No.
- Q: Is JCEC recommending “smarter” tree pits? A: Yes.

SUBCOMMITTEE REPORTS

Shade Tree Commission

- Policy piece recommending that the Shade Tree Commission be constituted.
- Any other additions to our letter to the Mayor? Existing laws vs Sustainability/Enforcement
- Chapter 10 Municipal Code is an empty ordinance.
- Solicit organizations to submit candidates to be on the new commission.
- Clause to require maintenance/enforcement of ordinances and Shade Tree Commission, and focusing on specific areas and less green areas.

Green Infrastructure Subcommittee

- Friday JCMUA meeting to collaborate on GI program
- JCEC reps: Michele Luebke and Gerry Nicholls
- Christy Davis Jackson spoke regarding near term items:
 - Requesting letter of support for 5-star grant application with Rutgers, Ramapo, and SJC on water restoration grant. What is our utility infrastructure? (i.e., coastal, tree shade, GI) and impact to average consumer’s everyday lives. Rain Barrel – Initiative AND Education. Long-term green infrastructure planning. Grant due **February 3rd**.



- Invitation and request to attend GI Initiative on **Friday January 16th**. Address mitigating effects of historical industry. Andy Kricun, Executive Director of Camden County Municipal Utilities Authority, focusing on Camden. Lowering owner impacts, flooding conditions, addressing and improving quality of life of residents. Same protocols can be applied to JCMUA. Andy put together a packet to share with similar regions.
- Our way to promote collaboration and coordination with other GI efforts.
- Per bylaws, JCEC can commission studies, influence policies, recommend to City Council. Subcommittee structure is established, and then utilized to have subcommittees meet and flourish, and have general JCEC meeting be a check-in.
- Further benefit would be JCEC providing a conduit to a subcommittee having its own budget.

NEW BUSINESS

The following new business items were discussed:

Need New Commissioners

Two resigning (Holt and Phillips-Lorenzo) and two inactive (Latham and Solowsky)

Mayoral Appointments

Q: How do you interact with the Council? A: We bring items forward to them on an as-need basis.

Letter of Support to Veto Bill A3969/S2647 Hackensack Meadowlands Agency Consolidation Act

- 80-page bill A3969/S2647 Hackensack Meadowlands Agency Consolidation Act
 - Propose to give Meadowlands Regional Commission authority over Liberty State Park.
 - Hudson County Assembly member initiated
 - From Governor Christie to privatize Liberty State Park.
 - Friends of Liberty State Park
 - JCEC and Mark Wesson JC Parks Coalition issued letter opposing the bill.
 - Passed 42-25. Appealing for a line-item veto.
 - Publicize this: Matt Katz, Terrence McDonald of Jersey Journal, PBS NJN news Jennifer Morrill – quote from Mayor

GENERAL PUBLIC PARTICIPATION

Attendees were encouraged to offer feedback.



Protection of Trees – Denise Bailey

- Take cue from other municipalities, i.e., Tree Fund where need to pay if disturbing/removing existing trees.
- Trees are now protected based on JCEC recommendation, but tripping hazard remains.
- Ownership of trees in right of way, just as property owners have for sidewalk maintenance

CLOSING REMARKS AND OTHER BUSINESS BY COMMISSIONERS

None.

ADJOURNMENT

The meeting was adjourned at 8:30 p.m.

ACTION ITEMS

1. Commissioner Verdibello to coordinate a potential presentation to the Environmental Commission regarding the Genesis product that converts latent heat from light fixtures to supplemental light.
2. Review and if warranted provide Letter of Support to George Vallone regarding “V-CEA” pilot study.
3. Finalize Shade Tree Commission position letter.
4. Chair Nicholls to attend Friday’s meeting at JCMUA with Andy Cricun.
5. Continue opposition of Liberty State Park oversight by newly formed Meadowlands Commission.
6. Commissioner Ristorucci to coordinate website updates and upgrades.
7. Tree Canopy Study data to be further reviewed and evaluated for subsequent meetings.

NEXT MEETING

The next Environmental Commission is scheduled for 17 February 2015 at 6:30 p.m. in the Council Chambers, 2nd Floor, City Hall, 280 Grove Street, Jersey City, NJ 07302.



Memorandum

TO: Ben Delisle, Jersey City Redevelopment Agency (JCRA)

FROM: George Vallone – Chairman NJ Builders Association (NJBA) Groundwater Task Force
Elizabeth George-Cheniara – Staff Environmental Attorney (NJBA)

DATE: December 19, 2014

RE: NJ Groundwater Pilot Project: Answers to Questions From JCRA

At our meeting in November, I presented a proposal that NJBA's groundwater committee has been working on for over a year. Our committee believes that redevelopers need a new protocol to establish a sub-regional, or virtual, Classification Exception Areas (referred to hereafter as a "V-CEA") in order to reduce the cost and expedite Brownfield Remediation associated with the existing New Jersey Department of Environmental Protection ("NJDEP") Site Remediation regulatory program. You brought up some excellent questions that needed to be answered in order for the JCRA to consider supporting this important proposed policy change at NJ DEP.

During NJBA's December 15th committee meeting, we discussed and prepared responses to all of your questions. For convenience, I have listed your questions and provide the following "NJBA Response".

1. If the JCRA is to be the signatory on the application for a V-CEA in your Pilot Study Area, then won't there need to be a contract between the JCRA and a LSRP so that there is an appropriate and legal agency relationship established?

NJBA Response – Yes. Similar to the existing historic fill CEA, this is a special action between NJDEP and an interested party. Thus, there should be a LSRP who fills out the application form and a sponsoring agency (like JCRA) who signs the form.

2. If the V-CEA is to be recorded on all of the properties in the pilot project area, then how will the individual properties within the pilot area have their individual Deeds noticed with the CEA?

NJBA Response - No, there would not be an individual property deed notice. However, the V-CEA would include all the properties in the sub region and would be

listed on NJDEP's website for normal database searches

3. What will the protocol be in our model template in terms of the number of groundwater tests required within a sub-regional area in terms of the number of groundwater tests required per acre or per block?
NJBA Response – The testing protocol in our model template will not be prescriptive in this regard. The number of samples or data required per property would be at the professional judgment of the LSRP as reviewed by the DEP. In most areas that are undergoing redevelopment, there will be a significant amount of data regarding existing groundwater contamination available for the LSRP, which would be accessible through standard OPRA requests to DEP.
4. Will there be a mechanism whereby individual property owners within the V-CEA can “opt out” of the area?
NJBA Response - Yes, individual property owners would have the opportunity to “opt-out” of a V-CEA. We view a V-CEA is an area-wide *administrative* tool to address sub-regional groundwater contamination. If a Person Responsible for Conducting Remediation (PRCR) is not the responsible party and wants to opt out, then the PRCR's LSRP must follow the technical requirements for site remediation.
5. Once a V-CEA has been established, will that also provide individual property owners with a waiver of the Biennial Permit requirement and future groundwater monitoring requirements?
NJBA Response - Since this will be an indeterminate V-CEA, there will be no requirement for a Biennial Permit or for groundwater monitoring.
6. What does our committee estimate the cost will be for future municipalities or Redevelopment Agencies to budget who want to replicate our sub-regional CEA template?
NJBA Response – The committee estimates the cost to establish a V-CEA to range from \$25,000 - \$50,000, and would include the costs to:
 - a. Obtain data from DEP
 - b. Evaluate the data
 - c. Establish the domain by using GIS mapping for the V-CEA and file it with NJDEP.
7. Since the entire area covered in our pilot project area is not in a redevelopment area, would the JCRA have the authority to apply for the sub-regional CEA?
NJBA Response - Our proposed protocol is that the applicant may be any party with an interest in the area.
8. If there is a designated redeveloper already in place within our pilot area, does the JCRA still have the authority to sign off on the V-CEA application form?
NJBA Response - Yes, we believe that even in an area where there is a designated redeveloper(s), the JCRA (as with any other party with an interest in the area) does have the authority.

We hope you consider these answers to be responsive to your concerns and we are available to meet with you to discuss further. The committee appreciates your insights as they helped us focus on key aspects of our model that needed to be addressed. With your assistance, our hope is to have your help to get the draft letter of support signed by the Mayor. We intend, with Mayor Fulop's leadership, to have other Mayors and Redevelopment Agencies throughout the state sign the support letter.

In the near future, we intend to present these letters of support to NJDEP Site Remediation Program Assistant Commissioner Mark Pedersen when we present our white paper on the use of V-CEAs throughout the state. Thank you for your anticipated support and consideration.

**SUB-REGIONAL CLASSIFICATION EXCEPTION AREA –
A PROPOSED PILOT APPROACH FOR PORTION OF JERSEY CITY
IN NORTHEASTERN NEW JERSEY**

1. Background

Since the early 1800s, cities such as Jersey City, Newark, and Paterson were the leaders of the industrial revolution, engines of invention, and a cause for a rising economy. Coincident with the decline of industry in the latter half of the 20th century was a transformation of those industrial properties into new uses, including service industries and, most recently, high-rise residential development. This revitalization stimulated modern transportation networks, increased and diversified populations, and re-established esteemed centers for culture and economy.

As many industries left the state over the last fifty years, historic contamination of soil and groundwater remained. The State of New Jersey has a clear policy objective for redevelopment, which is to promote Smart Growth in former industrial areas and to take advantage of existing infrastructure and transportation networks, while preserving our ecologically sensitive natural resources and agricultural land uses. In addition to the economic and social benefits provided by the redevelopment of underutilized and often contaminated properties known as “Brownfields”, the concurrent remediation of these properties serves to advance protection of human health and the environment in communities where Brownfields sites proliferate.

In the experience of the authors, the New Jersey Department of Environmental Protection’s (NJDEP) near-universal designation of Class II-A groundwater, which includes existing and potentially potable groundwater using conventional treatment, is negatively impacting the revitalization of the most environmentally and economically distressed planning areas. The Class II-A groundwater classification fails to recognize that groundwater in these areas is not presently potable, in many instances has not been historically potable, nor will it likely be potable in the future through conventional or, in some cases, any economically viable treatment options. Instead, potable water is typically supplied to the planning areas by utility companies and municipal authorities that are being protected through inter-state agency coordination and Smart Growth principles. The current blanket imposition of the Class II-A designation throughout the planning areas poses increased risk and uncertainty to Brownfields redevelopment and as a result, areas most in need of revitalization are instead “redlined” by redevelopers who are unable to proceed. Consequently there is a ‘negative’ impact to the environment as no source remediation work is being done on many of these sites.

2. Goals of Pilot Study

Through the pilot study described herein, the New Jersey Builders Association (NJBA) seeks to establish a sub-regional Virtual-Classification Exception Area (V-CEA) that will encourage the remediation and redevelopment of the State’s Brownfields in accordance with the initiatives of the Brownfield Redevelopment Task Force and New Jersey

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Brownfields Inter Agency Work Group, as well as applicable NJDEP rules and regulations. The V-CEA will be established within a sub-regional area with known and/or suspect regional groundwater degradation from historic fill and industrial operations whereby the responsibility for such contamination is either diffuse or unknown. The sub-regional V-CEA will be established in accordance with the “*Ground Water Classification Exception Area Guidance Document*” (November 1998) as well as more recent regulatory requirements pursuant to the 2009 Site Remediation Reform Act (“SRRA”), including the Administrative Requirements for the Remediation of Contaminated Site (ARRCS) at N.J.A.C. 7:26C-7.3. Using Geographic Information System (GIS), a Licensed Site Remediation Professional can establish a sub-regional V-CEA where an area does not meet the Class II-A groundwater classification, by way of historical anthropogenic and natural contamination. Consistent with the purposes outlined in the aforementioned November 1998 guidance document, the establishment of the sub-regional V-CEA will:

- Greatly enhance the ability of the NJDEP to conduct regional ground water studies;
- Perform an assessment of the cumulative impacts of industrial pollution on ground water;
- Geographically represent the impact of contaminated sites on ground water;
- Assist the NJDEP with their long-term environmental planning efforts; and
- Improve environmental conditions by encouraging source removal and soil remediation at many of these sites.

Concurrently, the NJBA envisions that a sub-regional V-CEA will also:

- Allows the Responsible Party to move forward with remediation of contaminated sites without addressing the sub-regional groundwater contamination, which is the subject of the V-CEA;
- Reduce the risk arising from the uncertainty and complexity of groundwater remediation;
- Encourage source removal and soil remediation;
- Provide for the implementation of a more cost-effective and time-efficient groundwater remediation, as impediments to capital formation for projects are removed;
- Encourage redevelopment of Brownfields while protecting human health and the environment; and
- Return areas to productive use, contribute to economic and social growth, and increase the tax base of the community.

NJBA distributed the pilot study and research paper herein to other trade organizations and interested entities, and gained the support of the Chemistry Council, while the paper is under review by other organizations.

3. Summary of Conclusions and Recommendations

DRAFT NJBA GROUNDWATER RECLASSIFICATION STUDY WHITE PAPER

As discussed below, the Brownfields Act recognizes that “[a] flexible regulatory system will result in more cleanups and thus the elimination of the public's exposure to these hazardous substances and the environmental degradation that contamination causes”. The NJBA has concluded that the NJDEP should be able to support the development of a sub-regional V-CEA, where appropriate, based upon the criteria outlined in this paper.

The following conclusions support that belief:

- There are many properties located within the pilot study area that have not been remediated and will continue to impact groundwater indefinitely;
- As groundwater contamination in the planning area is impacted by multiple sources with no single property typically contributing more than a fraction of contamination to the regional groundwater plume, it is unrealistic to treat each development project as a stand-alone contributor of contamination within the planning area;
- Those properties that are stagnant in the remediation process and which are impacted by historical and/or regional groundwater contamination that is complex and expensive to remediate will be more likely to begin the process if a V-CEA is in place;
- The development of a V-CEA will not alleviate the need for source removal and soil remediation;
- Free product such as Light Non-Aqueous Phase Liquid (LNAPL) must be remediated in accordance with the NJDEP Rules and Regulations;
- Receptor evaluation shall be implemented in accordance with the Technical Regulations; and
- Site-specific remediation must be conducted under the supervision of a Licensed Site Remediation Professional (LSRP).

NJBA believes that the above will facilitate successful real estate investment in Brownfield sites, which are the cornerstone of the Brownfields Act and NJDEP's own policy. Therefore, the NJBA respectfully requests that the NJDEP (1) supports the concept of a sub-regional V-CEA and (2) review and approve the V-CEA to be submitted for the defined Pilot Study area.

4. New Jersey's Redevelopment Policy

The environmental and economic benefits of the redevelopment of Brownfields and contaminated sites have long been recognized. On the environmental side, such redevelopment promotes Smart Growth principles, reduces air emissions and greenhouse gases, improves water quality through reduced runoff, remediates contaminated sites, addresses exposure to historic contamination, encourages faster source control, and generally accommodates and promotes environmentally responsible growth. On the economic development side, such redevelopment results in employment gains, revitalization of neighborhoods, generation of new sources of local revenue from previously unproductive land, and utilization of existing infrastructure to accommodate growth.

Numerous initiatives at all levels of government have been implemented to promote the public policy of redeveloping Brownfields in urban, suburban, and rural planning areas. The “Findings and Declarations” statement of the Brownfield and Contaminated Site Remediation Act succinctly captures the goals and public interest underlying this policy.

The Legislature finds and declares that due to New Jersey's industrial history, large areas in the State's urban and suburban areas formerly used for commercial and industrial purposes are underused or abandoned; that many of these properties, often referred to as brownfields, are contaminated with hazardous substances and pose a health risk to the nearby residents and a threat to the environment; and that these sites can be a blight to the neighborhood and a financial drain on a municipality because they have no productive use, and fail to generate property taxes and jobs. The Legislature further finds that often there are legal, financial, technical, and institutional impediments to the efficient and cost-effective cleanup of brownfield sites as well as all other contaminated sites wherever they may be. The Legislature finds and declares that the State needs to ensure that the public health and safety and the environment are protected from the risks posed by contaminated sites and that strict standards ***coupled with a risk based and flexible regulatory system will result in more cleanups and thus the elimination of the public's exposure to these hazardous substances and the environmental degradation that contamination causes.***

The Legislature therefore declares that strict remediation standards are necessary to protect public health and safety and the environment; that these standards should be adopted based upon the risk posed by discharged hazardous substances; that unrestricted remedies for contaminated sites are preferable and the State must adopt policies that encourage their use; that institutional and engineering controls should be allowed only when the public health risk and environmental protection standards are met; and that in order to encourage the cleanup of contaminated sites, there must be finality in the process, the provision of financial incentives, liability protection for innocent parties who clean up, cleanup procedures that are cost effective and regulatory action that is timely and efficient. N.J.S.A. 58:10B-1.2 (emphasis added).

Consistent with this legislative policy, the NJDEP recognizes that "it is a local, state and national priority to put Brownfield sites back into productive reuse. ***Facilitating successful real estate investment projects on brownfield sites is critical to improving the environment and economy of New Jersey.***" (Source: <http://www.nj.gov/dep/srp/brownfields/> (emphasis added)). Likewise, in implementing the Site Remediation Reform Act, NJDEP has recognized the important role of redevelopment in achieving environmental benefits, stating “[t]he goal is to increase the pace of remediation, thus helping to decrease the threat of contamination to public health and safety and of the environment, ***and to quickly return underutilized properties to productive use.***” (Source: <http://www.nj.gov/dep/srp/> (emphasis added)).

5. Barrier to Redevelopment – Current Groundwater Remediation Standards

One of the primary barriers to the reuse and redevelopment of Brownfields and contaminated sites is the cost of cleanup, and in particular the uncertainty in the cost to remediate contaminated groundwater.

The rigid application of the Class II-A GWQS in the context of remediation is significantly curtailing redevelopment efforts. Application of the Class II-A GWQS requires groundwater remediation to a level that allows **potable use**. For many areas, meeting this standard is simply untenable due to the existence of contamination of groundwater with historic fill pollutants, as well as the presence of a saline aquifer condition. Moreover, adherence to an unrealistic Class II-A standard in such locations has limited practical benefit as potable water is typically supplied by public water systems where treatment of all water sources to potable standards is required. In short, the groundwater does not need to be potable because clean water is derived from public water sources, and the ubiquitous presence of historic fill pollutants in such areas impedes, if not prevents, cost effective remediation of contaminated groundwater.

Application of Class II-A GWQS also significantly increases the uncertainty as to the cost and completion of remediation. Thus, it directly impacts the feasibility of redevelopment. Although many examples exist, it is difficult to quantify the total magnitude of how many potential redevelopment projects do not proceed due to the effect of uncertainty regarding GWQS on project ProForma analysis by redevelopers. Nevertheless, in the experience of the authors, the number is significant.

Where development does go forward with the application of Class II-A, the resulting housing, office, and retail space always become more expensive. In many cases, the expense of long term groundwater remediation obligations necessitated by application of the Class II-A standards prevents developers from proceeding with redevelopment projects that would otherwise positively impact and return underutilized areas to productive use. When this occurs, existing negative environmental conditions remain unabated, the stated legislative goals and policies intended to advance environmental and economic benefits of redevelopment are not realized, and environmentally distressed areas become economically isolated and effectively “redlined”. These conditions thwart, rather than promote, the Legislature’s stated goals in the Brownfield and Contaminated Site Remediation Act.

NJBA believes that an alternative to the Class II-A standard is necessary to address contaminated groundwater and to remove impediments that prevent realization of the stated legislative and departmental goals for remediation and redevelopment. Therefore, the NJBA presents within this pilot approach a modified, *workable* policy, where the underlying premise is that groundwater aquifers in certain areas of the State will **not** be used for potable purposes in the foreseeable future.

6. Receptor Evaluation

NJBA recognizes upfront the importance of protecting receptors. Nothing in this proposal changes the current protection afforded receptors in the existing Site Remediation process. Protection of receptors remains a key component of any remedy. The proposed sub-regional V-CEA will serve to protect potential drinking water receptors through restrictions on the installation of shallow potable wells. Receptor evaluations that will also be implemented under the V-CEA concept focusing on:

- The potential for on-site or off-site vapor intrusion;
- Impacts to down-gradient potable water sources (Class II-A groundwater) located beyond the limit of the V-CEA;
- Migration of groundwater contamination to surface water; and
- The potential for impacts to ecological receptors.

Therefore, the proposed sub-regional V-CEA will not alter the existing protection afforded to receptors.

7. Sub-regional V-CEA Pilot Study

Pilot Study Area

In order to test the efficacy of the sub-regional V-CEA, the authors propose to implement a pilot test in the northeastern part of the State. The pilot Study Area (Study Area) for the proposed development of a V-CEA consists of 225 acres in the City of Jersey City, as shown on the United States Geological Survey (USGS) Topographic Quadrangle of Jersey City and Weehawken, New Jersey (**Figure 1**). The elevation of the area averages 15-20 feet above mean sea level (AMSL). The surface topography dips slightly east towards the Hudson River, which is located approximately 1 mile east of the area.

The Study Area is mainly zoned as commercial, industrial, and utility/transportation land use with pockets of high density residential development (**Figure 2**). The area is bound to the east by Louis Munoz Marin Boulevard, to the north is the municipal boundary of Jersey City, to the west by the Palisades Cliffs, and to the south by Tenth Street in Jersey City. The Study Area is an approved metropolitan planning area that borders completed redevelopment areas known as Newport, Pavonia and Hamilton Square Park. Access to the area is supported by Interstate 78, Ferry Ports, and New Jersey Transit Light Rail and bus routes. An aerial photograph of the Study Area is shown on **Figure 3**.

The Study Area has been designated as an area in need of redevelopment by the City and includes the Jersey Avenue Park Redevelopment Plan. (See attached). Notwithstanding this favorable designation, of the 225 acres only 6 projects (totaling 40 acres) have municipal approvals in place for redevelopment, as shown on **Figure 5**. The redevelopment that is approved by the City is being hindered in large part by environmental constraints from the industrial past. Projects such as Hoboken Avenue, Powerhouse Arts and Liberty Landing entered into a Memorandum of Agreement in

2004-2006 with the NJDEP to complete the remediation; and construction has still not been started.

There are 47 sites with known groundwater contamination within the Study Area and only seven of these sites have a CEA and Deed Notice (DN), as shown on **Figure 4**. Of the seven CEAs, all are for contamination from benzene associated with active/former service stations; two CEAs are for lead, presumably associated with Historic Fill. It is noted that no CEAs have been established based on contamination that remains from past transportation, Brownfield sites or industrial use, although it is likely that groundwater within the study area is contaminated by chlorinated solvents, which are common industrial pollutants. The absence of CEAs for chlorinated solvents is an indicator that remediation of many legacy environmental sites within the study area are hindered by the unknown risk and complexity of groundwater remediation arising from the existing environmental policies and standards.

Geology and Hydrogeology

The Palisades Sill, a steep cliff, runs north and south along the west side of the Study Area. Geologically, the site is located in the Piedmont Physiographical Province of New Jersey. According to the Bedrock Geologic Map of Northern New Jersey, bedrock underneath the site consists of Jurassic Diabase (Jd) and the Lockatong Formation (TrI). Diabase is predominantly found as sheet-like intrusions of medium-to fine-grained texture and dikes of fine-grained texture; dark-greenish gray to black; subophitic texture.

The Lockatong Formation is predominantly cyclically deposited sequences consisting of light- to dark-gray, greenish-gray, and black, dolomitic or analcime-bearing silty argillite, laminated mudstone, silty calcareous, argillaceous, very fine-grained pyritic sandstone and siltstone, and minor silty limestone.

Based on a review of the New Jersey Geological Survey, approximately 240 acres are mapped Historic Fill areas within the Study Area. Historic Fill material, which is a non-indigenous material deposited to raise the topographic elevation of a site, may have been contaminated prior to emplacement. The unconsolidated sediment overlying the bedrock formations varies from peat and assorted sand and gravel that correlate with younger quaternary glacial meltwater deposits. The glacial deposits described in the region around the subject property vary and have been classified as lacustrine and fluvial in origin (NJGS, 2002).

The hydrogeology of the Study Area can be characterized into two principal water-bearing zones. The upper water-bearing zone is an unconfined aquifer, a product of the quaternary unconsolidated sediments and glacial meltdown deposits that overlie the bedrock. The sandstone bedrock (Lockatong Formation) constitutes the second water-bearing zone. It should be noted that the Lockatong Formation has been identified as a source of naturally occurring arsenic in the groundwater of the Newark Basin by the New Jersey Geological Survey (Serfes, 2004). The natural occurrence of arsenic in the Lockatong bedrock formation has been attributed to pyrite minerals often found as lenses in these formations.

In conclusion, the water table aquifer system, due to the conditions described above (poor transmissivity and water quality), has historically **not** been used as a source of public potable water.

Methodology for a Sub-regional V-CEA

The following methodology has been prepared to develop a V-CEA for the study area. A V-CEA is an institutional control that consists of a written and mapped description of groundwater contamination for an area, specifically the study area.

The main components of the V-CEA are:

- a. **“CEA Boundary”**, which defines the CEA area in which the Class II-A groundwater standards are not or will not be met;
- b. **“CEA Contaminants”**, which identifies the contaminants for which the CEA has been established; and
- c. **“CEA Duration”**, which is an estimate of the longevity of the CEA.

An initial application for a CEA / Well Restriction Area (WRA) Fact Sheet Form shall be submitted to the NJDEP. The initial CEA/WRA application contains information generated from the **NJDEP database search and evaluation**. The sub-regional V-CEA will not be inclusive of all the administrative requirements for establishing a ground water CEA in accordance with ARRCs section 7.3, but is inclusive of all the requirements for establishing a V-CEA for Historic Fill.

The following is the framework for a V-CEA Report:

a. The **CEA / WRA Fact Sheet Form** shall be completed by the LSRP and an agency of the municipality.

b. **Contaminant Data Tables** - Identification of the contaminants for which the CEA has been established and the applicable groundwater standard that will not be met, as well as the vapor intrusion screening levels.

c. **Fate and Transport Model** – Fate and transport modeling is not proposed; the duration of the CEA will be indeterminate for the study area.

d. **Well Search and Mapping** - A map of the ground water V-CEA that includes:

- i. The prevailing regional ground water flow direction;
- ii. The proposed ground water V-CEA boundary; and
- iii. The locations and identifications of wells, including but not limited to those that represent the extent of the sub-regional contamination.

e. **Public Notification** - Notify by mailing a copy of the CEA/ Well Restriction Area (WRA) Fact Sheet form (which will be used for the V-CEA) via certified mail, return receipt requested, to the following:

- i. The municipal and county clerks for each municipality and county in which the ground water V-CEA will be located;
- ii. The local, county and regional health department for each municipality and county in which the ground water V-CEA will be located;
- iii. The designated County Environmental Health Act agency for each county in which the ground water V-CEA will be located;
- iv. The county planning board for each county in which the ground water V-CEA will be located;
- v. NJDEP Water Supply Administration: Bureau of Safe Drinking Water, Bureau of Water Systems, and Well Permitting of Water Allocation; and
- vi. Each owner of any real property that will be within the foot print of the ground water V-CEA.

f. Groundwater Remedial Action Permit

A ground water remedial action permit is not required as this is not remediation.

g. Revisions / Updates to the V-CEA

The NJDEP/LSRP may revise or reestablish a ground water V-CEA at any time to more accurately reflect ground water conditions using any relevant data.

The NJDEP shall post an updated CEA/Well Restriction Area (WRA) Fact Sheet if it has revised the ground water classification exception area.

The NJDEP/LSRP shall remove a ground water classification exception area based upon ground water data, collected pursuant to N.J.A.C. 7:26C-7.9(f), that indicate that the concentrations of contaminants in the ground water are at or below all of the applicable ground water quality standards.

8. Background on Development of Initiative

During the fall of 2013, NJBA members involved in remediation and redevelopment activities began discussing the existing regulatory framework regarding groundwater classification and remediation. A number of impediments were identified that inhibited the undertaking of redevelopment projects in the State's designated Planning Areas, and most notable was the classification of groundwater in those areas that is not or could not be used for potable purposes. In light of NJBA's strong policies supporting redevelopment and the remediation of Brownfields properties, NJBA Officer and Brownfields redeveloper, George Vallone, discussed with NJBA leadership the need to further examine the groundwater classification issue by utilizing a scientific and quantifiable approach based upon the underlying contaminant data for a defined "pilot" area of the State. NJBA identified a number of critical stakeholders outside of NJBA, created a working group of practitioners (see contributing authors noted below), and convened ongoing meetings to further discuss the potential regulatory approaches to address the current limitations to remediation and redevelopment, while maintaining a sharp focus on the protection of human health and the environment.

The NJBA initially broached the subject groundwater reclassification study with the NJDEP during the Association's meeting with Commissioner Bob Martin on May 12, 2014. Mr. Vallone explained the current constraints placed upon Brownfields redevelopment projects due to the Department's groundwater reclassification regulatory framework and outlined the purpose of the study for a defined pilot area of Jersey City. The NJBA requested access to the data for the subject area. In light of Commissioner Martin granting of NJBA's request, further coordination and discussions were held with the Site Remediation Program staff to obtain data already available in-house at the Department.

Upon receipt of the data in July 2014, NJBA members analyzed the data, prepared the maps depicting the data, and drafted the subject research paper to propose the support of the sub-regional V-CEA pilot. The NJBA then provided an update and an excerpt of the research paper to the Department on November 5, 2014.

9. Broader Applicability

When homogeneity exists among historical land use and associated contamination, a uniform approach like a sub-regional V-CEA is appropriate to expedite the redevelopment process, minimize costs, and reduce uncertainty, while still protecting human health and the environment. NJBA has developed this proposed V-CEA for the specified pilot study planning area, and we believe that it has the potential for broader applicability on a state-wide basis where the appropriate conditions would be met.

10. Recommendations and Next Steps

As indicated by the methodology outlined above, the establishment of the sub-regional V-CEA would adhere to the Department's current applicable rules and regulations, as well as the 1998 "Ground Water Classification Exception Area Guidance Document". Therefore, in order to further encourage the remediation and redevelopment of the State's Brownfields, we believe that the NJDEP should approve the concept allow for the establishment of a sub-regional V-CEA using the methodology provided for the pilot study area.

If the concept of the proposed V-CEA is approved by the NJDEP, the NJBA and stakeholders will conduct the pilot study and prepare the V-CEA application.

11. Statutory and Regulatory References

Laws:

Brownfield and Contaminated Site Remediation Act (N.J.S.A. 58:10B-1 et seq.).

Site Remediation Reform Act (N.J.S.A. 58:10C-1 et seq.).

Rules and Regulations:

Ground Water Quality Standards (N.J.A.C. 7:9C)

Administrative Requirements for Remediation of Contaminated Sites (N.J.A.C. 7:26C)

Technical Requirements for Site Remediation (N.J.A.C. 7:26E)

Guidance Documents:

Ground Water Classification Exception Area Guidance Document (November 1998).

<http://www.nj.gov/dep/srp/guidance/cea/ceaguid2.pdf>

12. Contributing Authors

Steven M. Dalton, Esq. (Giordano Halleran & Ciesla P.C.)

Mr. Dalton is a shareholder with Giordano, Halleran & Ciesla, P.C. His primary practice is in Environmental Law. He assists clients in state and federal environmental permitting, regulatory compliance, solid and hazardous waste remediation, underground storage tank compliance, land use matters and real estate and corporate transactional matters, with a focus on due diligence and structuring transactions to address environmental conditions and liabilities. He provides counsel to clients in the context of development and redevelopment projects. Mr. Dalton has authored numerous publications on environmental topics and holds a B.S in Environmental Studies from the College of Environmental Science and Forestry.

Jessica DeGraff, LSRP

Miss DeGraff is a Licensed Site Remediation Professional (LSRP) with over fifteen years of experience, in all phases of environmental remediation and redevelopment of commercial, industrial, and transportation properties located throughout New Jersey. Her responsibilities included conducting site inspections, researching site history, interpreting historical maps and aerial photographs, evaluating analytical data, GIS, CADD and report writing. Her field responsibilities include overseeing the drilling of soil borings, excavation of test pits, conducting soil sampling, overseeing monitoring well installation, and conducting groundwater sampling using both conventional purging and low flow purging methods. Miss DeGraff provides advanced environmental consulting services to meet the Clients on-site soil remediation and redevelopment goals that are acceptable to the regulatory agency and protective of human health and the environment. She has a clear understanding of the environmental regulations and appropriate procedures for federal, state, and local entities, which in turn provides leadership to the client, team members, stakeholders, government, and municipality leaders. During her tenure with E2 Project Management LLC, Ms. DeGraff utilized her experience to assist in developing the pilot study protocol within New Jersey's site remediation regulatory framework and worked with other E2PM staff to prepare the relevant maps based upon the data obtained from the NJDEP.

Elizabeth George-Cheniara, Esq. (New Jersey Builders Association)

Ms. George-Cheniara is Vice President of Regulatory and Legal Affairs with the New Jersey Builders Association. She is the primary liaison for the Association with the New Jersey Department of Environmental Protection (including the Site Remediation and Water Resources divisions), Department of Agriculture, Highlands Council and

Pinelands Commission. She advises NJBA officers and members on environmental regulatory and legislative as well as related policy issues through monthly meetings and discussions. She prepares NJBA's official comment letters and testimony in response to state agency proposed rules, regulations and guidance documents, particularly in the environmental field. Ms. George-Cheniara ensures ongoing communication and dialogue between NJBA members and state agency representatives by facilitating meetings on critical regulatory issues affecting development and redevelopment opportunities.

John C. Ferrante, PE, LSRP (E2 Project Management LLC.)

Mr. Ferrante is currently President at E2 Project Management LLC. and is responsible for engineering and environmental practice at E2PM. He has over 40 years' experience in engineering, environmental remediation, land-use, and redevelopment projects. Mr. Ferrante has a bachelor and a master in engineering from New Jersey Institute of Technology and is a professional engineer in 6 states (New Jersey, Pennsylvania, New York, Delaware, Missouri, and Maryland). Mr. Ferrante has also been approved as a Licensed Site Remediation Professional (LSRP) by the NJ Department of Environmental Protection.

Joseph Hochreiter, CGWP (Senior Environmental Consulting, LLC)

Mr. Hochreiter is a Hydrologist and a Certified Ground Water Professional. He has strong educational credentials in Environmental Geology and Science (with a focus on hydrology) as well as over forty years of practical experience as an environmental scientist. His career at the U.S. Geological Survey spanned fourteen years, followed by twenty-eight years as Principal at three environmental consulting firms, including the last ten at Senior Environmental Consulting, LLC.. He has consulted as a technical expert on water supply science and policy, authoring Op Ed articles for regional newspapers, and presenting papers on water policy at professional associations, including: "Holliday, V.E., R.M. Washburn, R.M., and J.J. Hochreiter. 2005. "Water Wars East of the Mississippi: A Case Study in Southern New Jersey." Mr. Hochreiter was also named to NJDEP's Public Advisory Board that reviewed and commented on the Water Supply Master Plan. Additionally, He is an active member of the New Jersey Builders Association, the Builders League of South Jersey and the Steering Committee of the New Jersey Licensed Site Remediation Professionals Association.

Marty Judge, Esq. (Flaster/Greenberg P.C.)

Mr. Judge is a shareholder in the law firm of Flaster/Greenberg, PC and is the Chair of that firm's Real Estate and Environmental Law Department. He focuses on all facets of environmental litigation, in addition to environmental compliance and counseling work. Mr. Judge has widespread experience in environmental matters concerning CERCLA (Superfund), RCRA and New Jersey Spill Act actions; Natural Resource Damage (NRD) claims; ISRA applicability and compliance matters; underground storage tank issues; and indemnity and contribution actions among jointly responsible parties. His experience also includes water discharge and water allocation/resource law, brownfields and redevelopment, the environmental permitting components of land use, waste-water planning and federal/state wetlands jurisdiction matters, solid waste permitting and compliance, air pollution permitting and compliance, pesticide compliance and

enforcement, administrative agency litigation and appellate jurisprudence, environmental insurance coverage claims and toxic tort litigation (including class action defense). Mr. Judge joined Flaster/Greenberg after serving as a partner with a large national firm and having previously served as chief environmental litigator at another substantial law firm. He also served as a Deputy Attorney General for the State of New Jersey representing the New Jersey Department of Environmental Protection in all facets of its work. He is the former law clerk to the Honorable Milton B. Conford (deceased), former Presiding Judge of the Appellate Division of the New Jersey Superior Court and a temporary member of the New Jersey Supreme Court.

Richard Lake, LSRP (Geo-Technology Associates, Inc.)

Mr. Lake is a Licensed Site Remediation Professional (LSRP) with Geo-Technology Associates, Inc. in Somerset, New Jersey. Mr. Lake has been remediating contaminated sites under New Jersey's Site Remediation Program since 1998. His work includes Phase I Environmental Site Assessments/Preliminary Assessments to identify environmental concerns; assessment and remediation of pesticide impacts; supervising the removal of USTs; characterizing the extent and severity of soil and groundwater contamination; developing and implementing remedial strategies for soil and groundwater; coordinating remedial strategies with regulatory agencies; and regulatory reporting. Mr. Lake was a member of the committee that prepared the NJDEP Monitored Natural Attenuation Technical Guidance Document issued in March 2012, and is a member of the committee currently preparing the NJDEP Historically Applied Pesticide Technical Guidance Document.

Neil Rivers, LSRP (Langan Engineering & Environmental Services.)

Mr. Rivers is a Vice President with Langan Engineering & Environmental Services. He is a New Jersey Licensed Site Remediation Professional (LSRP) with over three decades environmental management experience, primarily related to the investigation, remediation and redevelopment of former industrial properties. Neil specializes in complex RI/FS, site remediation and redevelopment projects. He is a frequent speaker on site remediation practices and leads the Site Remediation Practitioner's Forum, a bimonthly roundtable of environmental professionals focused on the management of site remediation projects by LSRPs. Neil has served as the NJ Builders Association representative working on four NJDEP teams developing technical guidance for site remediation: 1) Clean and Alternative Fill; 2) Presumptive Remedies; 3) Receptor Evaluations; and Historical Pesticides Use.

Andrew Robins, Esq. (Sills Cummis & Gross P.C.)

Mr. Robins is the Chair of the Environmental Practice Group of Sills Cummis & Gross P.C. He uses his wide range of environmental law experience to counsel clients in regulatory compliance, cost recovery litigation, redevelopment, brownfields, transaction negotiation and risk analysis. His broad background includes environmental and brownfield redevelopment matters involving solid and hazardous waste regulations, the LSRP program, ISRA/ECRA, CAFRA, voluntary cleanups, medical waste regulations, wetlands regulations, Clean Water Act, Clean Air Act, underground storage tanks (USTs), stream encroachment (flood plain)

regulations, waterfront development, Meadowlands, Highlands, Pinelands and CERCLA (Superfund) as well as land use approval matters and related transactions and litigation. Mr. Robins negotiates transaction agreements and identifies and works to minimize risks associated with environmental matters. He obtains necessary approvals and permits, defends against governmental and citizen group enforcement actions, pursues cost recovery in litigation and challenges improper governmental actions and regulations. As a member of a number of the Department of Environmental Protection's stakeholder groups, Mr. Robins has been actively involved in the crafting and implementation of the new programs and initiatives, including the NJDEP's Site Remediation, Land Use, Solid and Hazardous Waste and Enforcement Programs. He was involved in the LSRP program and the SRRA legislation from the earliest initial meeting and remains active on the Site Remediation Program's Steering Committee and other stakeholder committees. Mr. Robins is often invited to speak and write on a variety of environmental law topics, such as cost recovery, "brownfields" redevelopment, ISRA/ECRA, voluntary cleanups, underground storage tanks, medical waste regulation, wetlands regulation, permit acquisition and air pollution.

L. Miguel Salinas, CPSS, LSRP (Paulus, Sokolowski and Sartor (PS&S))

Mr. Salinas has managed complex engineering and environmental projects for over 30 years. He currently oversees an environmental department that deals with permitting; remediation; ecological evaluation; air and noise assessments; archaeological studies; and GIS, primarily in New Jersey, Pennsylvania and New York. He understands the science and regulation of soils, groundwater, ecological systems, and remediation and redevelopment of impacted sites. Mr. Salinas works with multi-disciplined teams of planners, engineers, lawyers, and other professionals.

Mr. Salinas serves as an NJ Licensed Site Remediation Professional (LSRP) for private and public sector sites throughout New Jersey. He leads remediation programs from initial due diligence through remediation, post remedial care, and site redevelopment. Mr. Salinas is involved with various organizations and has spoken about: wetlands, redevelopment, regulations, LSRP and LEED-ND. He is involved with the LSRP program and sits on numerous environmental subcommittees. He has provided both expert assistance and testimony.

George Tyler, Esq. (Tyler & Carmeli, P.C.)

Mr. Tyler is a founding shareholder of Tyler & Carmeli, P.C. Mr. Tyler handles a wide variety of business, corporate, land use and real estate matters, including general counseling, administrative agency practice permit prosecution and related litigation. He concentrates in environmental law with extensive practice before both state and federal environmental agencies.

He served as Assistant Commissioner of the NJDEP and as director of the New Jersey Division of Environmental Quality. A graduate of Manhattan College with a degree in Mechanical Engineering, Mr. Tyler holds a JD degree, cum laude, from Seton Hall University School of Law. He is a frequent lecturer on environmental law.

Mr. Tyler represents development and industrial clients, particularly in the commercial and residential real estate, chemical, mining and waste management sectors. He has worked extensively on “brownfields” redevelopment projects including The Matzel & Mumford South Bound Brook redevelopment, the OENJ developments at the Elizabeth and Bayonne landfills, the Mercer County Hockey Arena on a former industrial site in Trenton and the closure and reuse of the Edgeboro Landfill. Mr. Tyler is a member of the NJDEP Site Remediation Advisory Group, the New Jersey Builders Association, the Chemical Industry Council Environmental Committee, and the New Jersey Business and Industry Association Environmental Quality Committee.

George Vallone, MBA, CRE (The Hoboken Brownstone Company)

Mr. Vallone, President of the Hoboken Brownstone Company, has been an urban developer for over 35 years and is the Vice President of the New Jersey Builders Association (NJBA) as well as Chairman of NJBA’s MXD affiliate and the Site Remediation Committee.

Mr. Vallone and his long-term business partner, Daniel Gans, bought their first brownstone in 1980 for \$20,000 and converted it into the first condominium ever sold out in Hoboken, NJ. Mr. Vallone has renovated brownstones, row houses, a 100 year old historic bank building, and has built mid-rise and hi-rise condominiums in Hoboken and Jersey City. Their general contracting company, Inner City Construction, Inc., (ICCI), has built over 1,000 units of affordable housing for several non-profit church affiliated and community based groups and for-profit housing corporations in Jersey City, Newark, Patterson and Trenton. Their development companies specialize in large mixed-use Brownfield redevelopment projects.

Mr. Vallone and Mr. Gans purchased and redeveloped the Maxwell House Coffee Factory, a 24 acre site on the Hoboken waterfront, in 1999. After obtaining all City, County, State, and Federal zoning and environmental approvals, they sold the fully approved project to a joint venture comprised of their development company and a public homebuilding company in January of 2004. The 1.8MSF project is now approximately 80% complete.

Mr. Vallone and Mr Gans are currently the Re-developer of a 7 acre Brownfield site in the Jersey Avenue Redevelopment Zone in downtown Jersey City that was formerly a chocolate factory. This project consists of 560 units, retail space and a new park that will be donated to the City upon completion in 2018.

Mr. Vallone and Mr Gans are also developing a six acre site into 873 units, retail space and a new city park on a three block site that was a former trucking terminal.

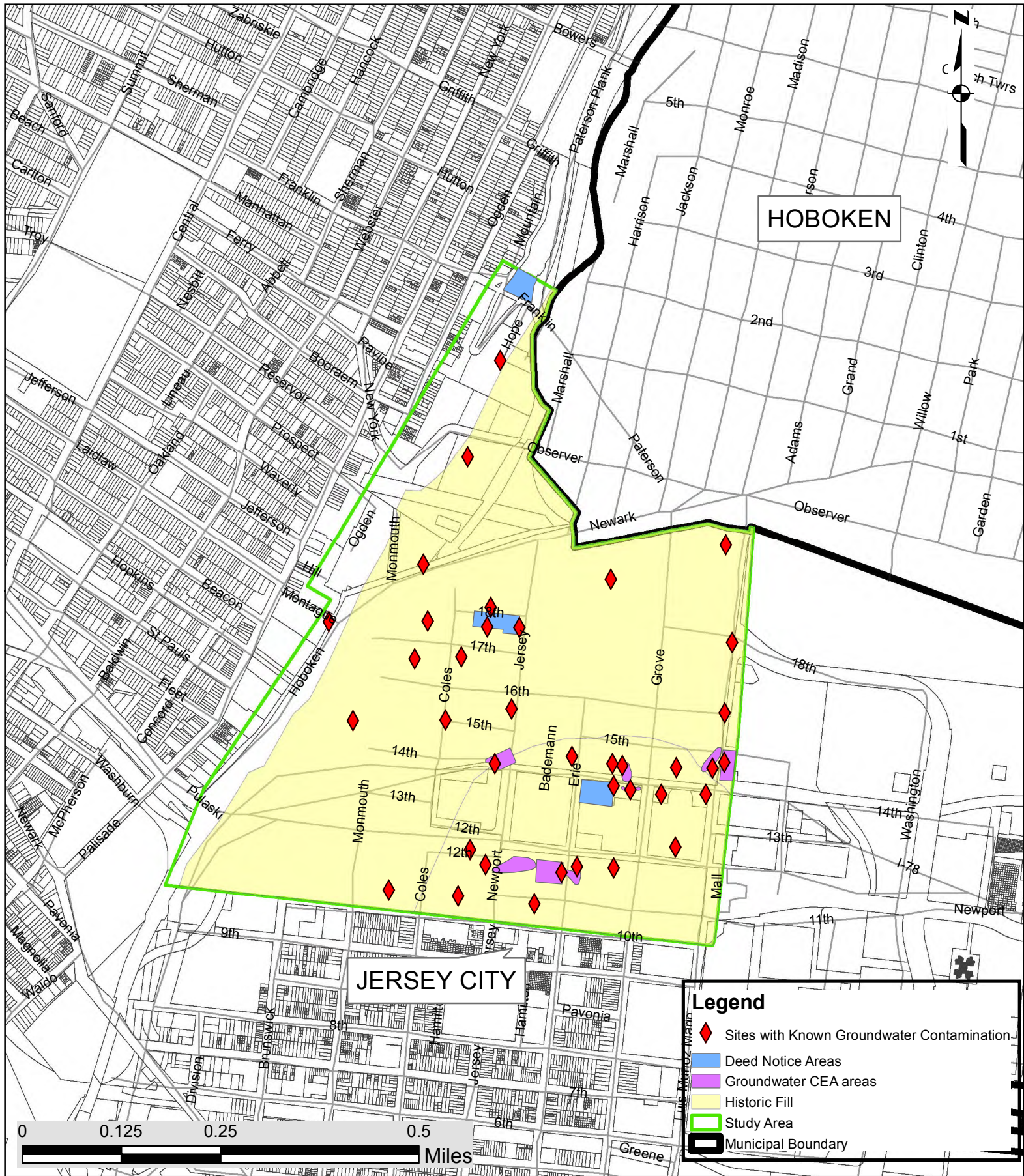
Mr. Vallone is past President and Chairmen of the Board of Our House, Inc. a non-profit group that builds, owns, and operates 29 group homes and provides job training for developmentally disabled adults. He graduated Gettysburg College with a BA in Accounting in 1976 and Fordham University with an MBA in International Finance in 1978. He was named a Counselor of Real Estate earning the CRE designation in 2012.

Catherine M. Ward, Esq. (Stradley Ronon Stevens & Young LLP)

Catherine Ward is a partner with Stradley Ronon Stevens & Young, LLP, a regional law firm based in Philadelphia, PA. She is resident in their Cherry Hill, New Jersey office and concentrates her practice in environmental, alternative energy, brownfields and real estate matters, representing both private companies and public entities. Ms. Ward counsels clients on regulatory and contractual environmental matters involving remediation issues, brownfields matters, redevelopment work and sustainability. She also regularly represents clients in land-use matters before local planning boards and assists lenders in connection with loans secured by contaminated real estate.

Ms. Ward is a frequent speaker on topics relating to brownfields and environmental issues. She has obtained grants from the National Science Foundation and the American Bar Association to present educational workshops, and co-authored college textbooks on the inter-relationship of environmental science and environmental law. Ms. Ward was recommended as a leader in environment in New Jersey in the 2011 edition of *Chambers USA: America's Leading Lawyers for Business*. She was listed as a "Top Attorney" in brownfields law by *SJMagazine* in 2009. She was named a New Jersey Super Lawyer® in several recent years by a vote of her peers. Ms. Ward has also been recognized by the Camden Area Health Education Centers, Inc. for her pro bono services over the past 15 years.

Since 2011, Ms. Ward has served on a statewide New Jersey Department of Environmental Protection (NJDEP) site remediation committee. She is a Board member of the Environmental Committee of the New Jersey State Bar Association, a member of the President's Council on Energy & Environment at Drexel University, Vice Chair of the Moorestown Township Environmental Advisory Committee and Chair of Sustainable Moorestown. Before attending law school, Ms. Ward worked as a chemist and then head of the project management department of an environmental laboratory and consulting firm where she oversaw sampling and analysis activities at, and developed remediation strategies for, hazardous waste sites.



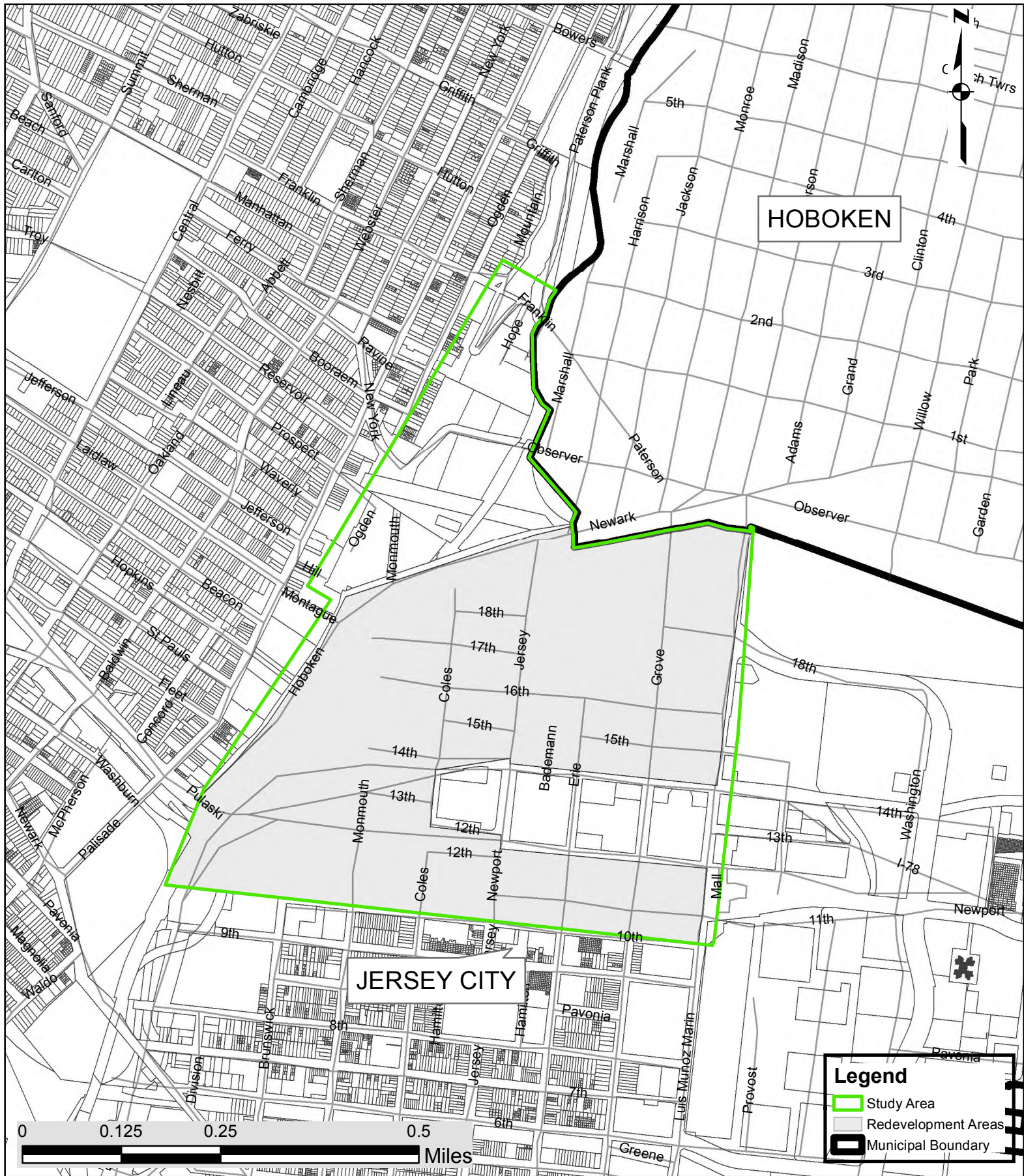
**NEW JERSEY BUILDERS ASSOCIATION
GROUNDWATER TASK FORCE
PILOT STUDY AREA**

FIGURE 4 - SITES WITH KNOWN GROUNDWATER CONTAMINATION



E2 PROJECT MANAGEMENT
87 HIBERNIA AVE.
ROCKAWAY, NJ 07866
TEL: 973-299-5200
FAX: 973-299-5059

SOURCE: NJDEP BUREAU OF GEOGRAPHIC INFORMATION SYSTEMS,
NEW JERSEY GEOGRAPHIC INFORMATION NETWORK
& JERSEY CITY - CITY PLANNING DIVISION



**NEW JERSEY BUILDERS ASSOCIATION
GROUNDWATER TASK FORCE
PILOT STUDY AREA**

FIGURE 5 - MUNICIPAL REDEVELOPMENT PLANS

SOURCE: NJDEP BUREAU OF GEOGRAPHIC INFORMATION SYSTEMS,
NEW JERSEY GEOGRAPHIC INFORMATION NETWORK
& JERSEY CITY - CITY PLANNING DIVISION



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